

CLAIMS

I claim:

A system for providing visual orientation information to a user, comprising:

orientation sensing means for providing positional change information of a user with respect to a baseline position;

data acquisition means to acquire said positional change information and said baseline position from said orientation sensing means;

data processing means for determination of a relative positional change of said user from said baseline position, based upon said positional change information and said baseline position acquired by said data acquisition means; and

display means for presenting to said user a set of visual cues indicative of said relative positional change.

2. The system of Claim 1 wherein said orientation sensing means comprises an accelerometer.

3. The system of Claim 1 wherein said orientation sensing means comprises a magnetostrictive sensor.

4. The system of Claim 1 wherein said orientation sensing means comprises a gyroscope.

5. The system of Claim 1 wherein said orientation sensing means is worn by said user on a band affixed to the head of said user.

6. The system of Claim 1 wherein said display means is affixed to a pair of eye glasses.

- 1 7. The system of Claim 1 wherein said display means comprises a liquid crystal display.
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- 3 8. The system of Claim 1 wherein said display means comprises a retinal scanner.
- 4
- 5 9. The system of Claim 1 wherein said display means comprises the projection of a series of averaged
- 6 video images acquired by a camera.
- 7
- 8 10. The system of Claim 1 wherein said display means comprises a holographic projection.
- 9
- 10 11. The system of Claim 1 wherein said visual cues comprise pitch information.
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- 12 12. The system of Claim 1 wherein said visual cues comprise roll information.
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- 14 13. The system of Claim 1 wherein said visual cues comprise yaw information.
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- 16 14. The system of Claim 1 wherein said visual cues comprise elevation information.
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- 18 15. A method of providing physical orientation information to a user comprising the following steps:
- 19 a. first sensing a baseline position of said user;
- 20 b. second sensing a positional change from said baseline position;
- 21 c. computing a relative amount of said positional change from said base line position; and
- 22 d. presenting said relative amount of said positional change as a series of visual cues to
- 23 said user.
- 24
- 25 16. The system of Claim 15 wherein said sensing steps comprise the use of an accelerometer.
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1 17. The method of Claim 15 wherein said sensing steps comprise the use of a magnetostrictive sensor.

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3 18. The method of Claim 15 wherein said sensing steps comprise the use of a gyroscope.

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5 19. The method of Claim 15 wherein said presenting step comprises providing non-orientation
6 information to said user.

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8 20. The method of Claim 15 wherein said second sensing step comprises sensing a change in said
9 user's pitch.

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11 21. The method of Claim 15 wherein said second sensing step comprises sensing a change in said
12 user's roll.

13
14 22. The method of Claim 15 wherein said second sensing step comprises sensing a change in said
15 user's yaw.

16
17 23. The method of Claim 15 wherein said second sensing step comprises sensing a change in said
18 user's elevation.

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20 24. The system of Claim 15 wherein said presenting step comprises provision of a holographic image
21 to said user.

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23 25. The method of Claim 15 wherein said presenting step comprises provision of a retinal scanning
24 image to said user.

1 26. The method of Claim 15 wherein said second sensing step is repeated a multiplicity of times, and
2 wherein said computing step comprises the determination of an average of a set of positional change data
3 acquired during the repetition of said second sensing steps.

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5 27. The method of Claim 26 wherein said repetition of said second sensing step occurs at a rate of
6 more than 10 times per second.

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8 28. The method of Claim 15 wherein said presenting step occurs at a rate of more than 6 times per
9 second.

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11 29. The method of Claim 15 further including the continuous repetition of steps b, c and d.
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1 30. A system for providing visual orientation information to a user, comprising:

2 orientation sensing means for providing positional change information of an object with
3 respect to a baseline position;

4 data acquisition means to acquire said positional change information and said baseline
5 position from said orientation sensing means;

6 data processing means for determination of a relative positional change of said object from
7 said baseline position, based upon said positional change information and said baseline position
8 acquired by said data acquisition means; and

9 display means for presenting to said user a set of visual cues indicative of said relative
10 positional change.